

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: Daniel R. PAVLIK et al. Examiner: Heller, Tammie K.
Serial No.: 10/717,721 Group Art: 3766
Filing Date: November 20, 2003 Docket No.: P0020005.00
Conf. No. 8711
Title: NOVEL WELDED JUNCTION FOR MEDICAL ELECTRICAL LEADS

Reply Brief

Mail Stop Appeal
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

The following is submitted in response to the Examiner's Answer mailed December 9, 2010.

Any required fee will be made at the time of submission via EFS-Web. In the event fees are not or cannot be paid at the time of EFS-Web submission, please charge any fees under 37 CFR § 1.16, 1.17, 1.136(a), or any additional fees to Deposit Account 13-2546.

Argument in Response to Examiner's Answer

A. Rejection Under 35 U.S.C. § 103 - Westlund (U.S. 6,643,550).

Cabled vs multi-filar coiled conductors.

A recurring dispute during prosecution is the meaning of the claims' requirement that the conductor comprises a plurality of strands cabled together and the Examiner's insistence that this limitation can be literally read on the multi-filar coil of Westlund. Clearly, if the Examiner is mistaken, the rejections over the cited art must be withdrawn.

In the Examiner's Answer, it states:

claims. The Appellant provides examples of the usage of the terms "cable" and "cabled" within the art in the Appendix associated with the Brief. The Examiner respectfully submits that while the Appellant's examples do illustrate an accepted usage of the terms "cable" and "cabled" within the art, they are not an exhaustive list of such usages. Furthermore, the claims do not require a cable, but rather require "a plurality of wire strands cabled together." Wire strands may be cabled together in the manner suggested by the examples provided by the Appellant, where the strands are twisted together along their lengths. However, the term "cabled together" could also refer to the attachment of a plurality of wire strands end-to-end, or to a plurality of wire strands that are connected to one another via a cable. As such, the Examiner respectfully submits that the examples provided by the Appellant do not provide a full picture of the breadth of the claim language. Furthermore, the Examiner would like to submit two pieces of

The Examiner thus acknowledges that Applicant has accurately reflected accepted usage of the terms "cable" and "cabled". So far, so good.

However, the Examiner then goes on to argue, entirely without support and for no apparent reason, that in the context of the prior art, these germs could refer to either:

- a) a plurality of wire strands attached end to end or
- b) a plurality of wire strands that are connected to each other via a cable.

It is respectfully asserted that in addition to being erroneous, the above statement is irrelevant, as the art cited by the Examiner shows neither of these configurations.

The relevant question is whether the cited prior art (multi-filar coil) meets the limitation to a plurality of strands cabled together. With regard to this question, the Examiner states as follows:

of the claim language. Furthermore, the Examiner would like to submit two pieces of evidence suggesting that multi-filar coils, which the Appellant argues are disclosed by Westlund, are themselves considered within the art to be the same as, or equivalent to, cables. Sundquist et al. (U.S. Patent No. 6,934,589) describes a conductor that may be a "coil, a single or multi-filar cable, or any other type of conductor suitable for this purpose" (see col. 9, ln. 21-23) Sundquist supports the understanding within the art that a multi-filar coil may itself be considered a cable, even indicating that a single-filar coil may be considered a cable. The Examiner therefore respectfully disagrees with the

First, Applicants respectfully note that the Examiner only cites one reference, not two. More importantly, the cited reference expressly treats multi-filar or single filar coils as alternatives to cabled conductors and, not as examples thereof. As such, the Examiner has proven the correctness of Applicants assertion that Westlund does not disclose a plurality of strands cabled together. Enough of this, lets move on.

Apparently recognizing that the multifilar coils of Westlund are not in fact a cabled conductor as required by the claims, the Examiner argues that they are generally substitutable for one another in leads. Generally, this is of course true. However, the claimed invention is not directed to the general substitution of a cable for a multi-filar coil. It is directed to the specifics of a welding technique for coupling specific type of conductor (cabled conductor). There should be no dispute at this point that the two conductor types are structurally different. Similarly, anyone who has ever done any welding, brazing, soldering or the like recognizes that the techniques which are successful vary as a function of the specific structures which are to be connected. How could it be otherwise? Applicants are entitled to have their claims examined by

someone with at least enough familiarity with the welding, solder, brazing arts generally to recognize this basic fact.

By way of analogy, square pegs and round pegs are known alternatives to one another and generally may both be used to hold things together. However, this in and of itself does not make it obvious to put a square peg into a round hole.

In order for the obviousness rejection to be proper, the Examiner would have to show that in this particular context (welding a conductor to a connector having a groove) the two types of conductors are obviously directly substitutable. The Examiner does not do so. Instead, throughout the rest of the discussion of the Westlund reference, the Examiner simply treats the multi-filar coil of Westlund as if it is a cabled conductor. The Examiner even takes dimensions from the multi-filar coil (e.g. its “diameter”) and treats them as the equivalent to the required diameter of the claimed cabled conductor, without further justification. For this reason, the rejection under Section 103 is respectfully asserted to be improper under the newly issued guidelines for obviousness rejections.

As quoted below, the Examiner has already taken the position that the equivalent measurement of the coil of Westlund to the diameter of the claimed multi-stranded, cabled conductor of the claims is the thickness of a single filar or wire of the multi-filar coil. This makes sense, as it is the corresponding radial thickness of both conductors, and is being compared to the depth (inward radial extension) of the groove. As a result, the dimension of the multi-filar coil of Westlund that corresponds to the diameter of the stranded cabled conductor as claimed is in fact less than the depth of the groove, as expressly acknowledged by the Examiner in both the Final Office Action and the Answer.

The Examiner has repeatedly stated as follows:

conductor 195, includes resistance welding (see col. 7, ln. 63-65). However, Westlund fails to disclose that the pre-weld diameter of the conductor is greater than the depth of the groove. It would have been obvious to one having ordinary skill in the art at the time the invention was made for the pre-weld diameter of the conductor to be greater than the depth of the groove, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233. Alternatively, one of ordinary skill in the art would recognize that the pre-weld diameter of the conductor may be smaller than, larger than, or the same size as the depth of the groove. Therefore, it

Now, in the Examiner's answer, the Examiner takes the contrary position that the total widths of all of the conductors in the multi-filar coil of Westlund added together rather than the diameter of a single conductor, are to be compared to the depth of the groove. With all due respect, the Examiner was correct the first time.

The problem here is that when substituting different structures for one another, the dimensions of one do not obviously substitute for or correspond to the dimensions of the other. For example, when substituting a square peg for a round one in a round hole, the Examiner's argument equally well suggests that the side to side thickness of the square peg should be the same as that of the side to side thickness of the round peg. If this worked, it would indeed be unobvious. The argument simply does not make sense.

In any case, Applicants understand that the Examiner has at least withdrawn the previous argument that "greater" is equivalent to "less than". The Examiner's new arguments that they are "variants" of one another or "alternatives" are irrelevant to the question of whether they are substitutable for one another. They are contrary and inconsistent with one another and thus not obviously interchangeable. Pegs and holes generally are cited as exemplary of this basic principle.

Further, the Examiner's arguments in the Answer are directly inconsistent with and contrary to the arguments submitted in the Final Office Action. The net result is a

rejection so unclear and inconsistent that it cannot possibly meet the standards of clarity and common sense set forth in the newly issued guidelines for obviousness rejections.

Again, the rejection over Westlund is respectfully asserted to be improper and its withdrawal is respectfully requested.

B. Rejection Under 35 U.S.C. § 103 - Rejection over Ley (U.S. 6, 912,423) in view of Bush (U.S. 5,385,578)

In the Answer, the Examiner attempts to refute Applicants' arguments with regard to the insulation in Ley making the addition of a resistance weld to Ley unobvious. The Examiner's arguments are set forth below:

Regarding the rejection of claims 1-6, 8-13, and 25 under 35 U.S.C. 103(a) as being unpatentable over Ley in view of Bush, the Appellant argues the obviousness of adding a resistance weld to the disclosed connection geometry of Ley. The Appellant argues that "in Ley, after insertion of the insulated conductor into the groove, the surface of the filar available opposite the intended weld site is covered with insulation, making a resistance weld impractical, or at the very least a bad idea." The Examiner respectfully Disagrees and submits that Ley discloses at col. 5, ln. 46-48 that as the conductor 106 is inserted into the groove 102, the insulation is removed. As such, a resistance weld would be neither impractical, nor a bad idea. The Appellant argues that "yes, the insulation could theoretically be stripped off, but the expressly stated benefit of the connection as disclosed in Ley is avoiding the necessity of performing this step." The Examiner respectfully submits that such an "expressly stated benefit" has not been found in Ley. In fact, as discussed above, Ley expressly discloses removing the insulation of conductor 106. Thus, the Appellant's conclusion that "adding a process (resistance welding) to the disclosed connection geometry would thus necessitate

With all due respect, the Examiner is flatly incorrect. The discussion above refers to Figures 9 and 10, reproduced below.

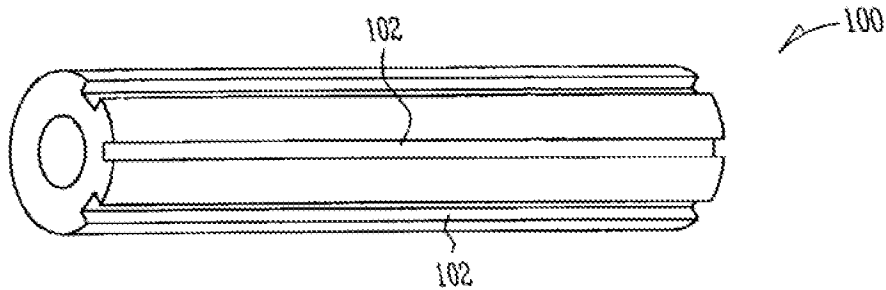


FIG. 9

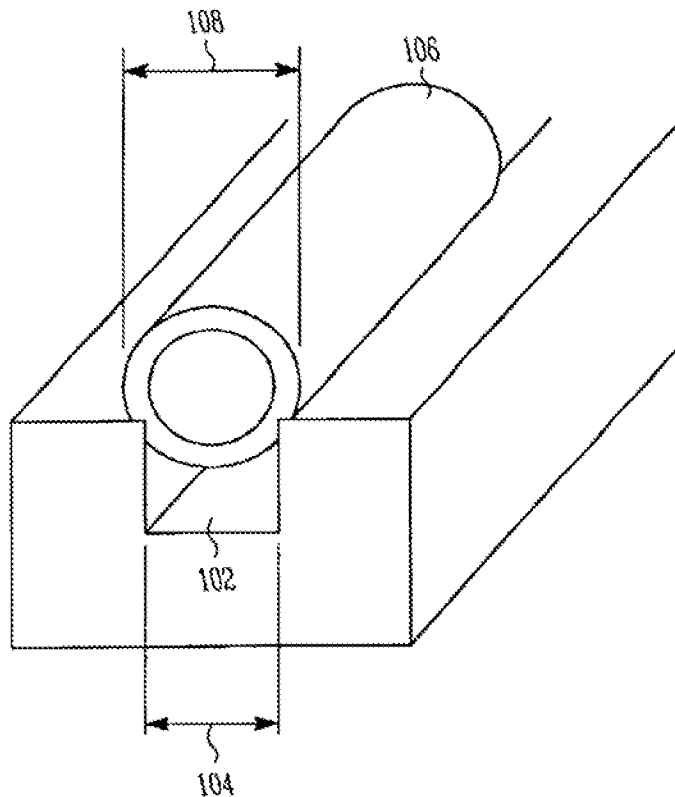


FIG. 10

These figures are described as follows:

FIGS. 9 and 10 illustrate another option for a terminal 100. The terminal 100 includes a plurality of grooves 102 formed therein. The grooves 102 are configured to receive an insulated filar 106 therein. The grooves have a width 104 which is slightly smaller than an outer diameter 108 of the filar 106. The filars 106 are forced into the groove 102. As the filars 106 are forced into the groove 102, the insulation of the filar 106 is removed, given the size of the width 104 for groove 102 relative to the filar 106. In one option, the terminal 100 is electrically conductive, and as the insulation of the filar 106 is removed, an electrical connection is made between the filar 106 and the terminal 100. In another option, the terminal 100 is formed of non-conductive material, such as polyetheretherketone (PEEK), and the filar 106 is electrically coupled with another component, such as a ring, as further described below.

The rejection is necessarily based upon the embodiment in which the terminal 100 is conductive, as resistance welding to a non-conductive terminal wouldn't seem likely to work very well and there would be no reason to do so anyway.

Clearly, not all insulation is removed from the conductor when the wire is inserted into the groove in the terminal 100. The portion of the insulation between the groove and the inward facing surface of the wire certainly stays put as the insulation on the side surfaces of the wire is sheared off and away from it. There is simply no place for it to go. As such, the statement that the insulation is removed cannot reasonably be read as teaching that all insulation is removed.

Only the insulation on the sides of the wire needs to be removed to make the required contact between the wire and the terminal pin. This leaves two possibilities with regard to the insulation on the outer surface of the wire, facing away from the groove. It can stay put, with only the side insulation sheared off or it can move outward

of the wire along with and attached to with the side surfaces of the insulation. Either way, the result is a layer of insulation located exterior to the wire, right in the way of making a resistance weld, exactly as stated by Applicants. Note that the length of insulation exterior to the groove is also still connected to the rest of the insulation on the wire at either end of the groove, so it doesn't somehow mysteriously just go away. Further, there is no need for it to just go away.

Because the side surfaces of the conductor are already coupled to the terminal pin, as expressly disclosed by Ley, there is no need for the insulation outward of the wire to be removed. As such, the Ley reference does in fact expressly disclose the benefit of not having to remove this portion of the insulation, also contrary to the Examiner's assertions.

Because the Examiner's arguments over Ley all depend upon the above mis-statements and mis-characterizations of the Ley reference, the rejection is respectfully asserted to be improper as a matter of law.

Withdrawal of the rejection is again respectfully requested.

Claim 29 was not rejected over Ley in view of Bush in the Final Office Action and so should be allowable over Ley and Bush regardless of the patentability of claims 1 – 6, 8 – 13 and 25 over these same references.

Applicant again respectfully asserts that the present claims are in condition for allowance. Withdrawal of the instant rejections and issuance of a Notice of Allowance is respectfully requested.

Respectfully submitted,

February 9, 2011
Date

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